The explanation of the method is followed by ten pages of specially prepared numerical tables to facilitate the calculation of p from r and k from p, and a table of proportional parts. The remainder of the report includes sixty-five pages of tables, for males and for females, as follows: mean annual death-rates in several age periods in the areas for which life tables are given, 1911 and 1912; l_x, survivors at several ages per 100,000 born; $l_x - l_{x+n}$, deaths in several age periods per 100,000 born; $\mathring{e}_x$, complete expectation of life at several ages; survivors in the several areas as percentages of the survivors at the same age in England and Wales; expectations of life in the several areas as percentages of the expectations at the same age in England and Wales. The tables are presented on the whole in good form, except that in some cases, for example, on pages 31 and 63, the entire page is closely packed with figures without horizontal spaces every fifth or tenth row to relieve the eye and assist in following across the page. Such forbidding arrays of figures are not infrequent in the publications of this office, and the practice is much to be regretted.

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Foreign Exchange Before, During, and After the War. By T. E. Gregory, Cassel Reader in Commerce, University of London. Oxford University Press. 1921. Pp. 116.

The chief purpose of this excellently written little volume is evidently to restate in brief compass and in simple language the theory now associated with the name of its leading modern exponent, Professor Gustav Cassel. Little attempt is made at inductive verification. The statistical aspect of the problem, though referred to summarily in Chapter VI, "The Present Position of the Foreign Exchanges," is mostly relegated to a brief appendix of tables of exchange rates, prices, and paper money in the leading countries, which are not specifically related to the text.

As a restatement of the Cassel theory Mr. Gregory's essay accomplishes its purpose well. The first two chapters, on the exchange market and its meaning, and how to read the exchange article, are introductory, giving only enough of the technique to make the succeeding discussion of theory intelligible to the uninformed reader. The body of the book is in Chapters III to VI, where the writer discusses, in very broad outline only, the methods and forces governing exchange fluctuations under the conditions of a gold standard as before the war, the devices adopted and suggested for stabilizing the exchanges during the war, and the factors which govern the movements of "dislocated exchange" such as Europe has been experiencing. Following Cassel, he distinguishes between daily or short-time fluctuations which are but a reflection of market changes in the supply of and demand for bills, and the underlying movement of rates, which with Cassel he holds to be fundamentally determined by relative price levels and price changes in the trading countries.

Mr. Gregory insists upon dividing exchange experts into two camps, those who, like himself, think that the exchanges are dislocated *solely* by price inflation,

and those who think that they are dislocated *solely* by reason of adverse international balances. The latter he thinks a superficial view, even when by adverse balance is meant the balance of payments as distinguished from the mere merchandise balance, because behind the changes in the international balance which affect exchange rates there are price changes; "the adverse balance is an effect and not a cause." The general conclusion is set forth in Cassel's own terms: "If we know the increase in the price levels in two countries, then the actual rates of exchange are at parity when the ratio between them corresponds to the purchasing power parity as expressed by the ratio of the price levels in the two countries. The peculiarity of the purchasing power parity is that it is a moving par; it varies with every change in the price levels in the two countries." If relative price levels, short-time fluctuations apart, do not conform to the "purchasing power parity," the currencies are said to be "undervalued" or "overvalued," as the case may be, in terms of the purchasing power parity; and it is a cardinal point of the Cassel doctrine that this situation sets at work forces which by effecting changes in international balances will tend to restore the exchanges to equilibrium at the purchasing power parity.

The writer alludes to the failure of the price and exchange data thus far to bear out the requirements of the theory, and cites the assertion of the Dutch economist, Miss E. C. Van Dorp, that Cassel's solution of these "abnormal deviations from the purchasing power parity" as being due to "one-sided restrictions" on trade has laid him open to the charge of being an apostate from his own theories by lugging in the adverse balance explanation by the back door. Mr. Gregory is himself inclined to ascribe this disconcerting failure of the theory to work, thus far, to the defects of price indices and to speculative influences.

It is not possible in a brief review to consider adequately the merits and the limitations of the Cassel theory. The doctrine apparently contains the implication, so often repeated despite frequent refutation and the easily observed facts, that international price levels tend toward an equality, serious departure from which brings about, in the absence of gold movements, a condition of depreciated exchange.* In Mr. Gregory's words, under normal conditions "there will tend to be established a uniform price level, or what is the same thing, the value of money in the different places will tend to be the same." To one familiar with the workings of the balance of international payments and the theory of reciprocal demand, this fallacy does not require formal disproof. The fact that before the war prices were, and had for generations been, higher in the United States than in England, higher in England than in Germany, higher in Germany than in Italy, higher in Italy than in China, is itself a sufficient refutation.

The assertion of a normal tendency toward international price uniformity, however, is not in my opinion necessary for the maintenance of the Cassel doctrine. My own principal difficulty with the theory arises from its insistence upon comparative price changes as the first and only fundamental cause of exchange depreciation. I cannot agree that "the adverse balance" is always

* The same assumption underlies Nicholson's distinction between "general" and "specific" depreciation; see *Inflation*, pp. 69–71. For criticism, see my article on "Foreign Exchange, Prices, and the Course of International Trade," *The Annals*, May, 1920.

"effect and not cause," or that price changes are always cause and not effect. As I have several times previously stated, I see no reason why students of foreign exchange theory should divide into the two camps Mr. Gregory designates. There is truth in both views. Adverse changes in the balance of payments and adverse changes in international price levels, due, for example, to "overissue" of inconvertible paper money, interact upon each other. Either may in a given instance be the cause of the other. Either, if sufficiently pronounced and prolonged, is capable of bringing about a condition of depreciated exchange; both together are bound to. Occasionally we find instances in which these two fundamental determinants of exchange rates counteract each other for a time, as when a country is borrowing capital from abroad at the same time that it is issuing more inconvertible paper. That was clearly the case in Argentina in the years preceding the Baring Panic. It was also the case during the period of our participation in the World War, when our government was advancing billions of dollars of credits to European governments at the same time that they were multiplying their issues of paper money. In this instance the loans were *consciously* applied toward exchange stabilization, but the principle was precisely the same. Ultimately, to be sure, both of the changes here instanced, in the international balance and in the volume of money, would unite to produce exchange depreciation, for the new loans would create large interest charges payable by the borrowing nation. But to say that either the price factor or the balance-of-payments factor is the fundamental determinant of the underlying exchange movement, in the sense that the one factor exercises an independent control over the other and is not in turn influenced by it, appears to me to require more proof than has yet been adduced. My own investigations thus far support the contrary view. It may be pointed out, too, that in a sense neither factor is fundamental or ultimate; both are but different forms of borrowing. An issue of inconvertible paper money is in the nature of a forced internal loan; an adverse international balance is evidence of international borrowing. The only "fundamental" determinant of dislocated exchange in Europe in recent years is the war itself, which gave rise to both forms of borrowing on an unprecedented scale.

Concerning the failure of the price and exchange data to bear out the requirements of the Cassel theory, to which allusion has already been made, it is interesting to note a striking instance within the last twelve months. During the war the Argentine peso was at a high premium in terms of both the dollar and the pound. Last fall and winter the prices of the exportable products of Argentina fell 50 to 70 per cent, and they have since remained decidedly weak. Deflation has been more rapid there than either here or in Europe. On the Cassel reasoning, the peso should therefore have appreciated in value relative to other currencies this past year; but in fact it has fallen markedly in terms of both the dollar and the pound. The dollar has gone to a premium of 20 to 30 per cent, and the pound after having been markedly and continuously depreciated since 1916 reached par in Buenos Aires last February.

As Mr. Gregory points out, "there is nothing essentially new" in the Cassel doctrine. "From the days of the Bullion Committee of 1810 it has been part of the accepted body of economic teachings that the increase of inconvertible

paper money would turn the exchanges against the country." The theory associated with the name of Cassel "is nothing but an elaboration" of this fact.

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Sugar Supply and Prices. Report of the Federal Trade Commission, November 15, 1920. Government Printing Office. 1920. Pp. 205.

It is unfortunate that this report of the Federal Trade Commission was not published a few months earlier when public interest in the sugar situation was at its peak, and responsibility for the abnormally high prices and shortage of 1919–20 was laid, in turn, upon President Wilson, because in his solicitude for the League of Nations he had neglected the humbler task of authorizing the Sugar Equalization Board to purchase the Cuban crop of 1919–20; upon Professor F. W. Taussig for his minority report to President Wilson, advising against government control of the sugar business for 1920; upon Attorney-General Palmer for authorizing the maximum price of 17 cents for Louisiana sugar, which action, it was alleged, had excited the "cupidity of Cuban producers"; and upon other individuals and classes of humbler order and significance. It will be recalled that at this time even the Lusk Committee turned from profound research into the machinations of the "Reds" to investigation of the sugar situation.

By House Resolution of October 1, 1919, the Federal Trade Commission was directed—

> to make an *immediate* investigation and report to the House of Representatives its findings on the subject of sugar used for domestic and manufacturing purposes, both as to its market price, wholesale and retail, and whether these prices are reasonable; and the amount of sugar now in the United States, both raw and refined, in the possession of sugar refiners, wholesale dealers, or in storage; said investigation to involve a report of supplies in the possessions of the United States, raw and refined, and the causes of the present sugar *scarcity*.

Here economists and statisticians have the startling exhibit that the much maligned "long run tendency" in economic life, though grinding slowly, grinds more rapidly than the statistical or economic investigator. For by the time the Commission was enabled to issue its report* in response to the above resolution, the record-breaking high price of sugar in the United States had attracted imports from all parts of the globe, and with supplies far in excess of demand the sugar market was in a state demanding an investigation into the causes of the sugar "glut," not scarcity, and a study of the technique of the moratorium, such as had been declared in Cuba, and other devices to prevent wholesale ruin to sugar producers, refiners, and dealers could logically have been substituted for the inquiry into the reasonableness of prices.

Although the original function of the investigation was not, therefore, fulfilled, the Commission has rendered a valuable service in thus compiling from many sources and arranging in compact and logical form all the significant economic and statistical data bearing on conditions in the production and distribution of sugar during the summer of 1919 and the first part of 1920, a period of unusual

* Dated November 15, 1920.